

Message

**From:** Strynar, Mark [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5A9910D5B38E471497BD875FD329A20A-STRYNAR, MARK]  
**Sent:** 4/12/2018 7:40:48 PM  
**To:** Leung, Lam-Wing H [LAM.H.LEUNG-1@chemours.com]  
**Subject:** RE: Chemours standards

Lam,

Great news and thanks a bunch. We are about to begin the serum/urine efforts. These may come in handy.

Mark

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**From:** Leung, Lam-Wing H [mailto:LAM.H.LEUNG-1@chemours.com]  
**Sent:** Thursday, April 12, 2018 1:08 PM  
**To:** Strynar, Mark <Strynar.Mark@epa.gov>  
**Cc:** Wellman, Amber D <AMBER.D.WELLMAN@chemours.com>; France, Danny <France.Danny@epa.gov>; Sivertsen, Scott <Sivertsen.Scott@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Culpepper, Linda <linda.culpepper@ncdenr.gov>; Medina-Vera, Myriam <Medina-Vera.Myriam@epa.gov>; Rumsey, Allison B. <allison.rumsey@arnoldporter.com>; Telford, Sheryl A <SHERYL.A.TELFORD@chemours.com>  
**Subject:** RE: Chemours standards

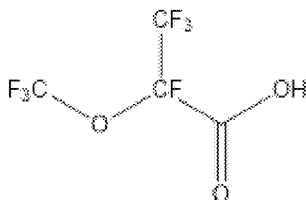
Hi Mark,

Per your email below, we will be shipping you and Scott at R4 Lab the following authentic standards (these are all in 0.1% (wt/vol) in water and ~2mL each) and they should arrive next Monday:

1. PFO2HxA or Aqueous solution of Sodium 2-(trifluoromethoxy-2,2-difluoromethoxy)-2,2-difluoroacetate;
2. PFO3OA or Aqueous solution of Sodium 2-[[difluoro(trifluoro-methoxy)methoxy]- difluoromethoxy]-2,2-difluoroacetate
3. PFO4DA or Aqueous solution of Sodium 2,2,4,4,6,6,8,8,10,10,10-undecafluoro-3,5,7,9-tetraoxadecanoate
4. PFESA Byproduct 4 or Aqueous solution of Dipotassium 2,2,3,3,4,5,5,5-4-(1,1,2,2-tetrafluoro-2-sulfoethoxy)pentanoate
5. NVHOS or Aqueous solution of Sodium 1,1,2,2-tetrafluoro-2-(1,2,2,2-tetrafluoro-ethoxy)ethane sulfonate

In addition, we are sending you two authentic reference materials listed below (0.1% (wt/vol) in water and ~2mL each).

1. The sodium salt of PMPA (perfluoromethoxypropyl carboxylic acid). You can find the structure and IUPAC name of acid form below:



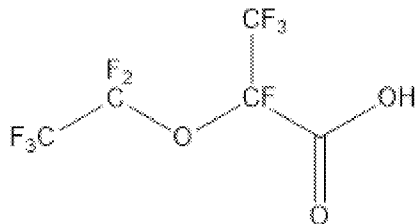
2,3,3,3-tetrafluoro-2-(trifluoromethoxy)propanoic acid

Chemical Formula: C<sub>4</sub>HF<sub>7</sub>O<sub>3</sub>

Molecular Weight: 230.04

Please note that PMPA is a structural isomer of PFECA F, a compound identified in the NERL SOP that you shared last year (D-EMMD-PHCB-62-SOP-01).

2. The sodium salt of PEPA (perfluoroethoxypropyl carboxylic acid). You can find the structure and IUPAC name of the acid form below:



2,3,3,3-tetrafluoro-2-(perfluoroethoxy)propanoic acid

Chemical Formula:  $C_5HF_9O_3$

Molecular Weight: 280.05

Please note that PEPA is a structural isomer of PFECA A, a compound identified in the NERL SOP that you shared last year (D-EMMD-PHCB-62-SOP-01).

Based on our process chemistry at Fayetteville Works and our most recent LC/MS/MS work, we believe that PMPA and PEPA are more relevant to Fayetteville Works waste streams and those compounds are now incorporated into our internal method. Please let me know if you should need any additional information and I look forward to learning any results you might have after you have the chance to "re-analyze" previous water samples with these standards.

Very Best Regards,  
Lam

P.S. I'll forward you and Scott tracking info once they are available.

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**Lam Leung, Ph.D.**

Technical Fellow

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**From:** Strynar, Mark [<mailto:Strynar.Mark@epa.gov>]

**Sent:** Thursday, March 15, 2018 9:02 AM

**To:** Leung, Lam-Wing H <[LAM.H.LEUNG-1@chemours.com](mailto:LAM.H.LEUNG-1@chemours.com)>

**Cc:** Wellman, Amber D <[AMBER.D.WELLMAN@chemours.com](mailto:AMBER.D.WELLMAN@chemours.com)>; France, Danny <[France.Danny@epa.gov](mailto:France.Danny@epa.gov)>; Sivertsen, Scott <[Sivertsen.Scott@epa.gov](mailto:Sivertsen.Scott@epa.gov)>; Gillespie, Andrew <[Gillespie.Andrew@epa.gov](mailto:Gillespie.Andrew@epa.gov)>; Culpepper, Linda

<linda.culpepper@ncdenr.gov>; Medina-Vera, Myriam <Medina-Vera.Myriam@epa.gov>

**Subject:** Chemours standards

Lam,

I hope all is going well for you. It took me some time to get to writing this letter. I hope the last Nor Easter missed you.

Per our discussion last week and the letter I received with the PFMOAA standard you provide I am asking for a small aliquot of additional chemical standards.

Your letter dated March 2, 2018 you indicated you had available PFO2HxA, PFO3OA and PFO4DA.

In your letter dated December 24<sup>th</sup> 2017 you indicated you had a standard coming available in January called PFESA Byproduct #4.

Lastly in your letter dated January 26<sup>th</sup>, 2018 after a discussion James McCord and I had with you, you indicated you had a standard for an analyte called NVHOS.

Please let me know when/if these can be made available to us. I expect the R4 lab would also benefit from these standards being made available. If this is also possible please let me know.

Thanks,  
Mark

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